

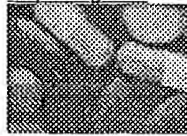
## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	1	"6462169".pn.	USPAT	OR	OFF	2006/12/13 12:55
S2	1	"5951997".pn.	USPAT	OR	OFF	2006/12/13 12:56
S3	14	("4429080"   "4470416"   "4532928"   "4543952"   "5133739"   "5236444"   "5403347"   "5431679"   "5468253"   "5554170"   "5644002"   "5713920"   "5951997"   "6206908").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/12/13 13:02
S4	1	"7097907".PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/12/13 13:30
S5	0	"522521".PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/12/13 13:30
S6	1	"5225521".PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/12/13 14:05
S7	2	"20060014023"	US-PGPUB; USPAT; USOCR	OR	OFF	2006/12/13 16:20
S8	0	"620767".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/12/13 16:20
S9	1	"6207767".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/12/14 08:14
S10	52	(poly\$5actide\$ or poly\$5glycolide\$ or \$5lactide or \$5lactic or glycolic or glycolide) same (end\$1cap\$5 or end\$1group) same (carboxylic or carboxyl or carboxylate)	US-PGPUB; USPAT; USOCR	OR	ON	2006/12/14 10:16
S11	1	"2003/0232198"	US-PGPUB; USPAT; USOCR	OR	ON	2006/12/14 10:17
S12	1	2003/0232198	US-PGPUB; USPAT; USOCR	OR	ON	2006/12/14 10:18
S13	205	lamberti.in.	US-PGPUB; USPAT; USOCR	OR	ON	2006/12/14 10:30
S14	0	"6211249".pn. and (conjugated or ionic)	US-PGPUB; USPAT; USOCR	OR	ON	2006/12/14 10:31

## EAST Search History

S15	1	"6211249".pn. and drug	US-PGPUB; USPAT; USOCR	OR	ON	2006/12/14 10:34
S16	2145	poly\$1ether\$1ester	US-PGPUB; USPAT; USOCR	OR	ON	2006/12/14 10:34
S17	26	S16 and (conjugate or conjugated or ionic or ionically) same (drug or medicine or theraputic or medical or medicament or pharmaceut\$5)	US-PGPUB; USPAT; USOCR	OR	ON	2006/12/14 10:37
S18	7	basic adj3 anti\$1coagulant	US-PGPUB; USPAT; USOCR	OR	ON	2006/12/14 10:37

[Skip navigation](#)

**MedlinePlus**  
Trusted Health Information for You

A service of the U.S. NATIONAL LIBRARY OF MEDICINE  
and the NATIONAL INSTITUTES OF HEALTH



**Search MedlinePlus**

[About MedlinePlus](#) | [Site Map](#) | [FAQs](#) | [Contact Us](#)

[Home](#) | [Health Topics](#) | [Drugs & Supplements](#) | [Encyclopedia](#) | [Dictionary](#) | [News](#) | [Directories](#) | [Other Resources](#) | [Español](#)

Other drug names: [A-Am](#) [An-Az](#) [B](#) [C-Ch](#) [Ci-Cz](#) [D-Dh](#) [Di-Dz](#) [E](#) [F](#) [G](#) [H](#) [I-J](#) [K-L](#) [M-Mh](#) [Mi-Mz](#) [N-Nh](#) [Ni-Nz](#) [O](#) [P-Pi](#) [Pm-Pz](#) [Q-R](#) [S-Sn](#) [So-Sz](#) [T-To](#) [Tp-Tz](#) [U-V](#) [W-Z](#) [0-9](#)

## Anticoagulants (Systemic)

 [Printer-friendly version](#)  [E-mail to a friend](#)

### Contents of this page:

- [Description](#)
- [Before Using This Medicine](#)
- [Proper Use of This Medicine](#)
- [Precautions While Using This Medicine](#)
- [Side Effects of This Medicine](#)
- [Brand Names](#)
- [Category](#)

### Description [Return to top](#)

Anticoagulants decrease the clotting ability of the blood and therefore help to prevent harmful clots from forming in the blood vessels. These medicines are sometimes called blood thinners, although they do not actually thin the blood. They also will not dissolve clots that already have formed, but they may prevent the clots from becoming larger and causing more serious problems. They are often used as treatment for certain blood vessel, heart, and lung conditions.

In order for an anticoagulant to help you without causing serious bleeding, it must be used properly and all of the precautions concerning its use must be followed exactly. Be sure that you have discussed the use of this medicine with your doctor. It is very important that you understand all of your doctor's orders and that you are willing and able to follow them exactly.

Anticoagulants are available only with your doctor's prescription, in the following dosage forms:

#### *Oral*

- Acenocoumarol
  - Tablets (Canada)
- Anisindione
  - Tablets (U.S.)
- Dicumarol
  - Tablets (U.S.)
- Warfarin
  - Tablets (U.S. and Canada)

#### *Parenteral*

- Warfarin
  - Injection (U.S. and Canada)

## Before Using This Medicine [Return to top](#)

In deciding to use a medicine, the risks of taking the medicine must be weighed against the good it will do. This is a decision you and your doctor will make. For anticoagulants, the following should be considered:

**Allergies**—Tell your doctor if you have ever had any unusual or allergic reaction to an anticoagulant. Also tell your health care professional if you are allergic to any other substances, such as foods, preservatives, or dyes.

**Pregnancy**—Anticoagulants may cause birth defects. They may also cause other problems affecting the physical or mental growth of the fetus or newborn baby. In addition, use of this medicine during the last 6 months of pregnancy may increase the chance of severe, possibly fatal, bleeding in the fetus. If taken during the last few weeks of pregnancy, anticoagulants may cause severe bleeding in both the fetus and the mother before or during delivery and in the newborn infant.

*Do not begin taking this medicine during pregnancy, and do not become pregnant while taking it, unless you have first discussed the possible effects of this medicine with your doctor. Also, if you suspect that you may be pregnant and you are already taking an anticoagulant, check with your doctor at once. Your doctor may suggest that you take a different anticoagulant that is less likely to harm the fetus or the newborn infant during all or part of your pregnancy. Anticoagulants may also cause severe bleeding in the mother if taken soon after the baby is born.*

**Breast-feeding**—Warfarin is not likely to cause problems in nursing babies. Other anticoagulants may pass into the breast milk. A blood test can be done to see if unwanted effects are occurring in the nursing baby. If necessary, another medicine that will overcome any unwanted effects of the anticoagulant can be given to the baby.

**Children**—Very young babies may be especially sensitive to the effects of anticoagulants. This may increase the chance of bleeding during treatment.

**Older adults**—Elderly people are especially sensitive to the effects of anticoagulants. This may increase the chance of bleeding during treatment.

**Other medicines**—Although certain medicines should not be used together at all, in other cases two different medicines may be used together even if an interaction might occur. In these cases, your doctor may want to change the dose, or other precautions may be necessary. *Many different medicines can affect the way anticoagulants work in your body.* Therefore, it is very important that your health care professional knows if you are taking *any* other prescription or nonprescription (over-the-counter [OTC]) medicine, especially:

- Amiodarone (e.g., Cordarone) or
- Cimetidine (e.g., Tagamet) or
- Metronidazole (e.g., Flagyl) or
- Omeprazole (e.g., Prilosec) or
- Zafirlukast (e.g., Accolate)—Effects of anticoagulants may be increased because of slower removal from the body
- Anabolic steroids (nandrolone [e.g., Anabolin], oxandrolone [e.g., Anavar], oxymetholone [e.g., Anadrol], stanozolol [e.g., Winstrol]) or
- Androgens (male hormones) or
- Antifungals, azole (e.g., Diflucan) or
- Antithyroid agents (medicine for overactive thyroid) or
- Aspirin or other salicylates, including bismuth subsalicylate (e.g., Pepto-Bismol) or
- Cephalosporins (medicine for infection) or
- Cinchophen or
- Clofibrate (e.g., Abitrate, Atromid-S) or

- Danazol (e.g., Danocrine) or
  - Dextrothyroxine or
  - Diflunisal or
  - Disulfiram (e.g., Antabuse) or
  - Fluvoxamine (e.g., Luvox) or
  - Inflammation or pain medicine (except narcotics) or
  - Lepirudin (e.g., Refludan) or
  - Medications causing low platelet count or
  - Paroxetine (e.g., Paxil) or
  - Propafenone (e.g., Rythmol) or
  - Quinidine (e.g., Quinidex) or
  - Sertraline (e.g., Zoloft) or
  - Sulfapyridine or
  - Sulfasalazine (e.g., Azulfidine) or
  - Thyroid hormones or
  - Ticlopidine (e.g., Ticlid) or
  - Zileuton (e.g., Zyflo)—These medications may increase the effects of anticoagulants and may increase the chance of bleeding
- 
- Carbenicillin by injection (e.g., Geopen) or
  - Dipyridamole (e.g., Persantine) or
  - Divalproex (e.g., Depakote) or
  - Moxalactam (e.g., Moxam) or
  - Pentoxifylline (e.g., Trantal) or
  - Plicamycin (e.g., Mithracin) or
  - Sulfinpyrazone (e.g., Anturane) or
  - Thrombolytic agents (medicine for blood clots) or
  - Ticarcillin (e.g., Ticar) or
  - Valproic acid (e.g., Depakene)—Using any of these medicines together with anticoagulants may increase the chance of bleeding
- 
- Alcohol (with chronic use) or
  - Barbiturates or
  - Carbamazepine (e.g., Tegretol) or
  - Corticosteroids (cortisone-like medicine) or
  - Glutethimide (e.g., Doriden) or
  - Griseofulvin (e.g., Fulvicin) or
  - Phenylbutazone (e.g., Butazolidin) or
  - Phenytoin (e.g., Dilantin) or
  - Primidone (e.g., Mysoline) or
  - Rifampin (e.g., Rifadin)—Effects of anticoagulants may be decreased because of faster removal from the body
- 
- Vitamin K (e.g., AquaMEPHYTON)—Vitamin K helps produce some important blood clotting factors and may decrease the effects of anticoagulants if used at the same time

**Other medical problems**—The presence of other medical problems may affect the use of anticoagulants. *Many medical problems and treatments will affect the way your body responds to this medicine.* Make sure you tell your doctor if you have any other medical problems, or if you have recently had any of the following conditions or medical procedures, especially:

- Aneurysm (swelling in a blood vessel) especially in the head or chest or
- Bleeding in the brain or
- Blood disorders or diseases, especially thrombocytopenia (low platelet count), polycythemia (high red blood cell count), or leukemia or
- Bruising, excessive or
- Cancer of the internal organs, especially of the abdomen or
- Childbirth, recent or
- Type 2 diabetes mellitus or
- Diverticulitis or
- Falls or blows to the body or head or
- Heart infection or
- Hemophilia or other bleeding problems or
- Hypertension (high blood pressure) or
- Inflammation of blood vessels or
- Intestinal problems, especially conditions that may affect the absorption of food or vitamins or
- Liver disease or
- Pregnancy, terminated or
- Spinal anesthetics or spinal puncture or
- Surgery, major, especially of the head or eye, or dental surgery or
- Toxemia of pregnancy or
- Ulcers, active, of the stomach, lung, or urinary tract or
- Vitamin K deficiency or
- Wounds, open, surgical or from an ulcer—These conditions may increase the chance of bleeding

In addition, it is important that you tell your doctor if you are now being treated by any other medical doctor or dentist.

## Proper Use of This Medicine [Return to top](#)

*Take this medicine only as directed by your doctor.* Do not take more or less of it, do not take it more often, and do not take it for a longer time than your doctor ordered. This is especially important for elderly patients, who are especially sensitive to the effects of anticoagulants. Also, it is best if you take this medicine at the same time each day.

*Your doctor or health care professional should check your progress at regular visits.* A blood test must be taken regularly to see how fast your blood is clotting. This will help your doctor decide on the proper amount of anticoagulant you should be taking each day. Some patients may be able to test their blood at home; discuss with your doctor whether or not this is possible for you.

## Dosing—

The dose of these medicines will be different for different patients. *Follow your doctor's orders or the directions on the label.* The following information includes only the average doses of these medicines. *If your dose is different, do not change it unless your doctor tells you to do so.*

### *For acenocoumarol*

- For oral dosage form (tablets):
  - For preventing or treating harmful blood clots:
    - Adults—The usual dose is 1 to 10 milligrams (mg) per day, adjusted according to blood tests.
    - Children—Dose must be determined by your doctor.

*For anisindione*

- For oral dosage form (tablets):
  - For preventing or treating harmful blood clots:
    - Adults—The usual dose is 25 to 250 milligrams (mg) per day, adjusted according to blood tests.
    - Children—Dose must be determined by your doctor.

*For dicumarol*

- For oral dosage form (tablets):
  - For preventing or treating harmful blood clots:
    - Adults—The usual dose is 25 to 200 milligrams (mg) per day, adjusted according to blood tests.
    - Children—Dose must be determined by your doctor.

*For warfarin*

- For oral dosage form (tablets):
  - For preventing or treating harmful blood clots:
    - Adults—The starting dose is usually 2 to 5 milligrams (mg) per day for two to four days. Then, your dose may be adjusted, depending on your condition and results of routine blood tests.
    - Children—Dose must be determined by your doctor.
- For injection dosage form:
  - For preventing or treating harmful blood clots:
    - Adults—The starting dose is usually 2 to 5 milligrams (mg) per day for two to four days. Then, your dose may be adjusted, depending on your condition and results of routine blood tests.
    - Children—Dose must be determined by your doctor.

**Missed dose—**

If you miss a dose of this medicine, take it as soon as possible. Then go back to your regular dosing schedule. If you do not remember until the next day, do not take the missed dose at all and do not double the next one. *Doubling the dose may cause bleeding.* Instead, go back to your regular dosing schedule. It is recommended that you keep a record of each dose as you take it to avoid mistakes. Also, be sure to give your doctor a record of any doses you miss. If you have any questions about this, check with your doctor.

**Storage—**

To store this medicine:

- Keep out of the reach of children.
- Store away from heat and direct light.
- Do not store this medicine in the bathroom, near the kitchen sink, or in other damp places. Heat or moisture may cause the medicine to break down.
- Do not keep outdated medicine or medicine no longer needed. Be sure that any discarded medicine is out of the reach of children.

**Precautions While Using This Medicine** [Return to top](#)

*Tell all medical doctors, dentists, and pharmacists you go to that you are taking this medicine.*

*Check with your doctor right away if you notice any unusual bleeding or bruising.*

*Check with your health care professional before you start or stop taking any other medicine, or change the amount you are taking.* This includes any nonprescription (over-the-counter [OTC]) medicine, even aspirin or acetaminophen. Many medicines change the way this medicine affects your body. You may not be able to take the other medicine, or the dose of your anticoagulant may need to be changed.

*It is important that you carry identification stating that you are using this medicine.* If you have any questions about what kind of identification to carry, check with your health care professional.

While you are taking this medicine, it is very important that you avoid sports and activities that may cause you to be injured. Report to your doctor any falls, blows to the body or head, or other injuries, since serious internal bleeding may occur without your knowing about it.

Be careful to avoid cutting yourself. This includes taking special care in brushing your teeth and in shaving. Use a soft toothbrush and floss gently. Also, it is best to use an electric shaver rather than a blade.

Drinking too much alcohol may change the way this anticoagulant affects your body. You should not drink regularly on a daily basis or take more than 1 or 2 drinks at any time. If you have any questions about this, check with your doctor.

The foods that you eat may also affect the way this medicine affects your body. Eat a normal, balanced diet while you are taking this medicine. *Do not go on a reducing diet, make other changes in your eating habits, start taking vitamins, or begin using other nutrition supplements unless you have first checked with your health care professional.* Also, check with your doctor if you are unable to eat for several days or if you have continuing stomach upset, diarrhea, or fever. These precautions are important because the effects of the anticoagulant depend on the amount of vitamin K in your body. Therefore, it is best to have the same amount of vitamin K in your body every day. Some multiple vitamins and some nutrition supplements contain vitamin K. Vitamin K is also present in green, leafy vegetables (such as broccoli, cabbage, collard greens, kale, lettuce, and spinach) and some vegetable oils. It is especially important that you do not make large changes in the amounts of these foods that you eat every day while you are taking an anticoagulant.

Check with your doctor if you are unable to eat for several days or if you have continuing stomach upset, diarrhea, or fever. This could decrease the amount of vitamin K that gets into your body and could affect this medicine.

Be careful if the weather is very hot for several days. This could increase the effects of the medicine.

After you stop taking this medicine, your body will need time to recover before your blood clotting ability returns to normal. Your health care professional can tell you how long this will take depending on which anticoagulant you were taking. *Use the same caution during this period of time as you did while you were taking the anticoagulant.*

## Side Effects of This Medicine [Return to top](#)

Along with its needed effects, a medicine may cause some unwanted effects. Although not all of these side effects may occur, if they do occur they may need medical attention.

Since many things can affect the way your body reacts to this medicine, you should always watch for signs of unusual bleeding. Unusual bleeding may mean that your body is getting more medicine than it needs. *Check with your doctor immediately if any of the following signs of bleeding or overdose occur:*

- Bleeding from gums when brushing teeth; blood in urine; nosebleeds; pinpoint red spots on skin; unusual bleeding or bruising; unusually heavy bleeding or oozing from cuts or wounds; unusually heavy or unexpected menstrual bleeding
- *Signs and symptoms of bleeding inside the body—dose-related*



- o Abdominal or stomach pain or swelling; back pain or backaches; black, tarry stools; bleeding in eye; blood in stools; blood in vomit or vomit that looks like coffee grounds; blood in urine; blurred vision; chest pain; confusion; constipation; coughing up blood; diarrhea (sudden and severe); dizziness or fainting; headache (continuing or severe); joint pain, stiffness, or swelling; loss of appetite; nausea and vomiting (severe); nervousness; numbness or tingling of hands, feet, or face; paralysis; shortness of breath; weakness (sudden)

Also, check with your doctor as soon as possible if any of the following side effects occur:

- *Less common*
  - o Cough or hoarseness; fever or chills ; lower back or side pain; painful or difficult urination; skin rash, hives, or itching
- *Rare*
  - o Blisters or itching on skin; blue or purple toes; dark urine; pain in toes; painful red sores on skin, especially on thighs, breasts, penis, or buttocks; sores, ulcers, or white spots in mouth or throat; sudden increase or decrease in amount of urine; swelling of face, feet, and/or lower legs; trouble in breathing; yellow eyes or skin

Other side effects may occur that usually do not need medical attention. These side effects may go away during treatment as your body adjusts to the medicine. However, check with your doctor if any of the following side effects continue or are bothersome:

- *Less common or rare*
  - o Bloating stomach or gas (with dicumarol); cold intolerance; diarrhea (more common with dicumarol) ; loss of appetite; nausea or vomiting (more common with dicumarol); stomach cramps or pain

These medicines sometimes cause temporary loss of hair on the scalp.

Depending on your diet, *anisindione* may cause your urine to turn orange. Since it may be hard to tell the difference between blood in the urine and this normal color change, check with your doctor if you notice any color change in your urine.

Other side effects not listed above may also occur in some patients. If you notice any other effects, check with your doctor.

## Brand Names [Return to top](#)

Some commonly used brand names are:

### In the U.S.—

- Coumadin<sup>3</sup>
- Miradon<sup>1</sup>

### In Canada—

- Coumadin<sup>3</sup>
- Warfilone<sup>3</sup>
- Sintrom<sup>4</sup>

**Note:** For quick reference, the following anticoagulants are numbered to match the corresponding brand names.

Other commonly used names are nicoumalone; dicoumarol.

This information applies to the following medicines:

- |   |                                  |
|---|----------------------------------|
| 4. Acenocoumarol (a-see-no-COOM-a-rol)* | 2. Dicumarol (dye-KOO-ma-role)‡‡ |
| 1. Anisindione (an-iss-in-DYE-one)‡     | 3. Warfarin (WAR-far-in)‡        |

‡ Generic name product may be available in the U.S.

§ Generic name product may be available in Canada

\* Not commercially available in the U.S.

† Not commercially available in Canada

## Category [Return to top](#)

- **Anticoagulant** –Acenocoumarol; Anisindione ; Dicumarol; Warfarin

Revised: 5/18/99

### Thomson Micromedex, Inc. Disclaimer

Copyright © 2006 Thomson Healthcare. All rights reserved. USP DI ® and Advice for the Patient ® are registered trademarks of USP used under license to Thomson MICROMEDEX. Information is for End User's use only and may not be sold, redistributed or otherwise used for commercial purposes.

[Home](#) | [Health Topics](#) | [Drugs & Supplements](#) | [Encyclopedia](#) | [Dictionary](#) | [News](#) | [Directories](#) | [Other Resources](#)

[Copyright](#) | [Privacy](#) | [Accessibility](#) | [Quality Guidelines](#)

U.S. National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894

[National Institutes of Health](#) | [Department of Health & Human Services](#)

Page last updated: 12 December 2006